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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,255	03/23/2004	Toshiyuki Tanaka	3693-53	1912
23117	7590	05/31/2006	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			NGUYEN, THANH NHAN P	
			ART UNIT	PAPER NUMBER
			2871	
DATE MAILED: 05/31/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

10/806,255

Applicant(s)

TANAKA ET AL.

Examiner

(Nancy) Thanh-Nhan P. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/26/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This communication is responsive to Amendment dated 1/26/2006. Claims 9-17 have been newly added. Further, upon the examination, the restriction/election requirement dated 6/14/2005 has been withdrawn. Therefore, claims 5-8 have been re-joined, and claims 1-17 are pending for the examination.

Claim Objections

Claim 10 is objected to because of the following informalities: Claim 10 currently read as "... wherein the light-blocking section and/or a storage capacitor electrode covers the entire opening..." It appears it should have read as "wherein the light-blocking section covers the entire opening..." since "and/or a storage capacitor electrode" has not been introduced in claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 1-11 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the last limitation is unclear meaning as "the light-blocking section is asymmetric with respect to the protruding portion so that a downstream rubbing direction edge of the light-blocking section is located further from an adjacent edge of the protruding portion than is an upstream rubbing direction edge of the light-blocking

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section which may or may not extend beyond an adjacent edge of the protruding portion. Examiner did try to read the explanation in the Remarks, but still could not see the meaning of the limitation. Therefore, for the examination purpose, that limitation will be interpreted as "the light-blocking section is asymmetric with respect to the protruding portion."

Claims 2-11 depend on claim 1, therefore claims 2-11 are rejected under 35 U.S.C. 112, second paragraph, as well.

Further, **claims 9 and 13** also have unclear meaning (the underline text) as "the light-blocking section shades a defective orientation domain formed in an area in the liquid crystal layer, the area corresponding to a plane surface proximate to the protruding portion." Therefore, for the examination purpose, claims 9 and 13 will be interpreted as "the light-blocking section shades a defective orientation domain formed in an area in the liquid crystal layer."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 9, 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa et al (US 2003/0076464) in view of Kim (US 2004/0263702).

Regarding claims 1-4, Ozawa et al discloses (figs. 3A-3B) a liquid crystal display device, comprising:

- a pixel electrode substrate (10) including a transmissive pixel electrode section (32) and a reflective pixel electrode section (31) corresponding to one pixel
- a counter electrode substrate (20) including a counter electrode section (21) and arranged so as to oppose the pixel electrode substrate
- a liquid crystal layer arranged between the pixel electrode substrate and the counter electrode substrate, wherein:
- the pixel includes a transmissive region corresponding to at least part of the transmissive pixel electrode section and a reflective region corresponding to at least part of the reflective pixel electrode section
- at least one of the pixel electrode substrate and the counter electrode substrate includes a protruding portion (6) provided so that a thickness of the liquid crystal layer in at least part of the reflective region is smaller than that in the transmissive region
- one surface of the at least one of the pixel electrode substrate and the counter electrode substrate that is closer to the liquid crystal layer is subjected to a rubbing treatment in a predetermined direction
- the liquid crystal display device includes a light-blocking (9)

- wherein the light-blocking section includes one or more pieces, and the light-blocking section is asymmetric with respect to the protruding portion (see fig. 3A)

Ozawa et al lacks disclosure of the light-blocking section is formed using the same material as, one or more other elements of the liquid crystal display device such as storage capacitor electrode or scanning line or both storage capacitor electrode and scanning line.

It was well known in the liquid crystal display device to have light blocking section uses the same materials as one or more other elements such as storage capacitor electrode or scanning line or both storage capacitor electrode and scanning line for the benefit of reducing cost and/or reducing the steps in manufacturing as evidenced by Kim, [fig. 4: scanning line '130a'; storage electrode '130b'; black matrix '9']. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have light blocking section uses the same materials as one or more other elements such as storage capacitor electrode or scanning line or both storage capacitor electrode and scanning line for the benefit of reducing cost and/or reducing the steps in manufacturing.

Regarding claims 5-7, Ozawa et al discloses (figs. 3A-3B) the light-blocking section is provided so as to shade a defective orientation domain formed in a downstream and upstream vicinity of the protruding portion with respect to the rubbing direction; wherein the protruding portion is formed so as to extend across the pixel in a direction not parallel to the rubbing direction and parallel to a substrate plane.

Regarding claim 9, Ozawa et al discloses (fig. 3A) the light-blocking section shades a defective orientation domain formed in an area in the liquid crystal layer.

Regarding claim 11, Ozawa et al discloses the light-blocking section includes multiple light-blocking pieces, [considering each portion of the light-blocking '9', which corresponds to each side of the protrusion, is a piece, see fig. 3A].

Claim 17 is met the discussion regarding claim 3 rejection above. Further, the scanning line being in electrically communication with at least one switching element (TFT) of the display, [see fig. 4 (Kim)].

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa et al in view of Kim as discussed above, and further in view of Fujimori et al (US 7,030,948).

Regarding claim 8, Ozawa et al lacks disclosure of the light-blocking section is provided so as to additionally shade defective orientation domains formed beside the protruding portion.

Fujimori et al discloses the light-blocking section (BM) shade other domains formed beside the protruding portion (44a1) for the benefit of blocking unwanted light and covering the defective orientation domains, [fig. 11G]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have the light-blocking section shaded other domains formed beside the protruding portion for the benefit of blocking unwanted light and covering the defective orientation domains.

Claims 10 and 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa et al in view of Kim as discussed above, and further in view of Matsushita et al (US 6,885,418) and Ha et al (US 6,697,138) and Zhang (US 6,219,118).

Regarding claim 10, Ozawa et al lacks disclosure of an opening is provided in a color filter layer of the counter electrode substrate, the opening in the color filter layer being provided in the reflective region, and wherein the light-blocking section covers the entire opening in the color filter layer in the reflective region.

First, it was well known to have an opening provided in a color filter corresponding in a reflective region in transflective liquid crystal display (LCD) device for the benefit of having the same color density in both reflective and transmissive regions in the transflective LCD device, as evidenced by Matsushita et al, [fig. 2]. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have an opening provided in a color filter corresponding in a reflective region in transflective liquid crystal display (LCD) device for the benefit of having the same color density in both reflective and transmissive regions in the transflective LCD device.

Further, Ha et al discloses (fig. 4) a transflective LCD, in which part of the reflective layer (181) formed above the thin film transistor (T); and Zhang discloses (fig. 1) light-blocking layer (116) formed above the thin film transistor as well. Therefore, it would have been obvious to a person of ordinary skill in the art to have the light-blocking section covers the entire opening in the color filter in the reflection region (by modifying

the teachings of Matsushita et al, Ha et al and Zhang), and therefore does not patentably distinguish the invention.

Claim 12 is met the discussion regarding claim 10 rejection above.

Claim 13 is met the discussion regarding claims 12 and 9 rejection above.

Claim 14 is met the discussion regarding claims 12 and 2 rejection above.

Claim 15 is met the discussion regarding claims 12 and 3 rejection above.

Claim 16 is met the discussion regarding claims 12 and 11 rejection above.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to (Nancy) Thanh-Nhan P. Nguyen whose telephone number is 571-272-1673. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


(Nancy) Thanh-Nhan P Nguyen
Examiner

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ANDREW SCHECHTER
PRIMARY EXAMINER